

rather than deeply cordate.

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(a) Papers from the University of Michigan Herbarium.

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NOVELTIES AMONG THE AMERICAN VERBENACEAE

Harold N. Moldenke

Continued studies in the herbarium of the New York Botanical Garden and elsewhere have brought to light a good many as yet undescribed novelties in the *Verbenaceae*, some of which are presented herewith. More complete and detailed descriptions, as well as discussion of relationship and citation of specimens examined, will be found in the author's forthcoming generic monographs.

LIPPIA GEHRTII Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus dense albido-hispidis; nodis plusminus annulatis; foliis oppositis; petioliis alato-marginatis dense albido-hispidis; laminis chartaceis late ellipticis vel subovatis, ad apicem rotundatis, ad basim truncatis vel subtruncatis, regulariter serrato-dentatis utrinque albido-hirsutis.

Shrub; branches and branchlets slender, obtusely tetragonal, densely hispid with harsh white divergent hair 2.5--3 mm. long; nodes hidden, but apparently more or less annulate; principal internodes 0.9--3 cm. long; leaves decussate-opposite; petioles slender, 3--7 mm. long, canaliculate above, more or less wing-margined, densely white-hispid like the branchlets; blades chartaceous, rather uniformly dark-green on both surfaces, broadly elliptic or subovate, 1--4 cm. long, 0.7--3.2 cm. wide, rounded at apex, regularly serrate-dentate from base to apex with rounded or subacute, broad, short teeth, truncate or subtruncate at base (varying to acuminate and prolonged into the petiole on young twigs), abundantly hirsute on both surfaces with long white hair similar to that on the branchlets; midrib slender, impressed above, prominent beneath; secondaries slender, 4--6 per side, arcuate-ascending, impressed above, prominulous beneath; veinlet reticulation abundant, impressed above, prominulous beneath; inflorescence borne in terminal open panicles, consisting of 2 or 3 (or more) decussate pairs of stipitate heads and a sessile terminal one, the stipitate

ones about 1.5--2.5 cm. long, subtended by a pair of foliaceous bracts which are similar to the smaller leaves in all respects or somewhat obovate, 6--15 mm. long and 5--10 mm. wide (or larger), short-stipitate, densely hispid on both surfaces; axillary heads also often present in the uppermost leaf-axils beneath the panicle; inflorescence-branches densely white-hispid like the branchlets; heads oblong, 1.2--1.7 cm. long, 1--1.5 cm. wide, densely many-flowered; bractlets large and conspicuous throughout the head, ovate, sessile, very thin-textured, 5--7 mm. long, 4 mm. wide at base, sharp and acute at apex, softly pubescent with multicellular whitish somewhat bulbous-based hairs which are dense on the margins and more scattered on the body of the bractlets; corolla about 8 mm. long, its limb about 5 mm. in diameter.

The type of this species was collected by Guilherme Gehrt -- in whose honor it is named -- at Itirapina, São Paulo, Brazil [Herb. Instit. Biol. S. Paulo 8313] on April 29, 1923, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LIPPIA TEPICANA Moldenke, sp. nov.

Frutex vel arbor; ramis ramulisque subgracilibus saepe suberoso-marginatis dense resinoso-punctatis et griseo-puberulis; nodis annulatis; foliis oppositis; petiolis dense velutinis vel strigosis dense resinoso-granularibus; laminis crasse chartaceis, supra scaberrimis bullatis, ellipticis vel lanceolatis, ad apicem acutis, ad basim acuminatis, regulariter serrulatis, supra bulboso-pilosis, subtus dense breviterque pubescentibus vel tomentellis.

Shrub or tree; branches and branchlets rather slender, acutely or obtusely tetragonal, sometimes corky-margined, densely puberulent with grayish appressed hairs, less so in age, densely resinous-punctate; nodes annulate; principal internodes 0.5--3.5 cm. long; leaves decussate-opposite; petioles slender, 0.5--1.5 cm. long, varying from densely velutinous when young to merely short-pubescent or strigose and densely resinous-granular; blades firmly thick-chartaceous, uniformly gray-green on both surfaces or somewhat lighter beneath, very rough-scabrous and bullate above, elliptic or lanceolate, 2.5--9 cm. long, 1--5 cm. wide, acute at apex, regularly serrulate from almost the base to the apex with small acute antrorse teeth with subrevolute margins, acuminate at base, pilose above with harsh bulbous-based whitish hairs, densely short-pubescent or tomentellous beneath (velutinous-tomentose when young); midrib slender, mostly impressed above (or appearing as though raised by being more densely pilose), rounded-prominent beneath; secondaries slender, 5--9 per side, arcuate-ascending, impressed above, prominent beneath; veinlet reticulation abundant,

impressed above, sharply prominent beneath; inflorescence axillary, paniculate, one panicle and sometimes also 1 or 2 single-headed peduncles issuing from each axil or sometimes only several single-headed peduncles; the simple inflorescences 1--3 cm. long, the panicles to 9 cm. long; peduncles and inflorescence-branches very slender, 1--4.5 cm. long, densely puberulent, short-pubescent, or strigose with cinereous hair; panicles with 1--3 whorls of capitate branches; heads hemispheric during anthesis, oblong in fruit, densely many-flowered, 3--14 mm. long, 5--10 mm. wide; bractlets large, conspicuous, imbricate in many ranks, persistent, dry and scarious in fruit, reniform, 3--5 mm. long, 4--6 mm. wide, densely puberulent on both surfaces during anthesis, glabrate and prominently venose in fruit; receptacle 3--7 mm. long.

The type of this species was collected by Edward Palmer (no. 1969), at Tepic, Nayarit, Mexico, between January 5 and February 6, 1892, and is deposited in the Britton Herbarium at the New York Botanical Garden.

STACHYTARPHETA CALDERONII Moldenke, Suppl. List Vern. Names 23, nom. nud. (1940), sp. nov.

Herba; ramis crassiusculis subglabratibus vel sparse albido-hirsutis; nodis hirsuto-annulatis; foliis oppositis; petioli alato-marginatis sparse hirsutis; laminis membranaceis ellipticis, supra scaberrimis, ad apicem acutis, ad basim longe acuminatis, crassiuscule serratis utrinque sparse hirsutis.

Herb; stems rather stoutish, obtusely tetragonal, subglabrous or bearing a few scattered, long, white, hirsute hairs at the nodes and when young; nodes annulate, mostly marked by a circumferential band of long, white, more or less divergent, hirsute hairs 1--2 mm. long; leaves decussate-opposite; petioles slender, 5--10 mm. long, wing-margined, sparsely hirsute with widely scattered white hairs like those at the nodes; blades membranous, rather uniformly dark green on both surfaces, very scabrous above, elliptic, 5--9 cm. long, 1.9--2.6 cm. wide, acute at apex, long-acuminate at base and prolonged into the petiole-wings, rather coarsely serrate from below the middle to the apex with sharply acute often irregular teeth, sparsely hirsute on the larger venation on both surfaces with scattered white hairs like those on the petioles and very sparingly so on the lamina itself or hirsutulous throughout on the upper surface, densely pustulate-punctate above; midrib slender, flat above, prominulous beneath; secondaries very slender, 6--8 per side, arcuate-ascending, flat above, flat or slightly prominulous beneath, joined in many loops near the margins; veinlet reticulation abundant, obscure or indiscernible a-

bove, flat beneath; spikes terminal, 11.5--25 cm. long, very densely many-flowered, erect; flowers imbricate to the base; peduncles obsolete; rachis deeply excavated, stout, 3--4 mm. wide, glabrous or sparsely hirsute at the very base; bractlets lanceolate, 6--7 mm. long, to 2 mm. wide, long-acuminate at apex, closely appressed, glabrous, the margins entire and not scarious; corolla 8--10 mm. long, its limb about 5 mm. in diameter, glabrous.

The type of this species was collected by Salvador Calderón y Arana (no. 989) -- in whose honor it is named -- near Chalchuapa, Salvador, in 1922 and is deposited in the United States National Herbarium at Washington.

x STACHYTARPHETA HYBRIDA Moldenke, hybr. nov.

Herba perennis multibrachiatis; caulis ramisque gracilibus sparse albido-hirsutulis glabrescentibus; nodis indistincte annulatis; foliis oppositis plerumque fasciculatis; petiolis obsoletis vel brevibus et late alatis; laminis tenuiter chartaceis ellipticis, ad apicem acutis vel rotundatis, ad basim abrupte cuneatis et in petiolum attenuatis, regulariter serratis utrinque sparse albido-hirsutulis.

Probably a hybrid between S. jamaicensis (L.) Vahl and S. strigosa Vahl. Perennial herb, abundantly branched from the base; stems and branches slender, acutely or obtusely tetragonal, scattered-pilose with long, divergent, whitish, hirsutulous hairs, glabrescent in age; nodes indistinctly annulate; principal internodes 0.8--4 cm. long; leaves decussate-opposite, usually bearing 2 or more smaller ones on greatly abbreviated twigs in their axils; petioles obsolete or, if present, broadly winged and scarcely distinguishable from the long-acuminate base of the blade; blades thin-chartaceous, uniformly colored on both surfaces, often brunnescent in drying, the expanded portion elliptic, 1--3.5 cm. long, 0.5--2.1 cm. wide, acute at apex (or rounded in outline), regularly serrate with short antrorse teeth, abruptly cuneate at base and attenuate into the long petiole-like acumination, which is to 2 cm. long, sparsely pilose on both surfaces with scattered whitish hirsutulous hairs, more densely so on the midrib and secondaries; midrib slender, flat on both surfaces or slightly prominulous beneath; secondaries 4--6 per side, very slender, flat on both surfaces or slightly prominulous beneath; veinlet reticulation indiscernible on both surfaces; spikes terminal, 15--24 cm. long, rather slender, many-flowered, the flowers imbricate but not especially dense; peduncles abbreviated, 1--2 cm. long, sparsely pilose-hirsutulous; rachis about 3 mm. wide, deeply excavated, very sparsely scattered-pilose at base, glabrescent above; bractlets lanceolate, 5--8.5 mm. long, to 2 mm. wide, regularly triangular-attenuate from about the middle

to the filiform apex, the upper margins subscarious and usually several-denticulate, very minutely and obscurely puberulous on the back and margins.

The type of this hybrid was collected by Erik Leonard Ekman (no. H.11,978) in a pineland at an altitude of about 1100 m., Sierra de Ocoa, prov. de Azua, San José de Ocoa, near Bejucal, Dominican Republic, on March 18, 1929, and is deposited in the United States National Herbarium at Washington.

STACHYTARPHETA MUTABILIS var. *MAXONI* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit spicis tenuioribus; ramis petiolisque sparsiore pubescentibus; laminis foliorum supra sparse pilosis, subtus dense adpresso-puberulis.

This variety differs from the typical form of the species in its more slender spikes (4--5 mm. in diameter, exclusive of the corollas) and its less densely pubescent branches, petioles, and leaf-blades -- the upper leaf-surface being merely scattered-pilose, the lower surface merely densely puberulent with very short and appressed hair. The leaves are also larger, to 13 cm. long and 6 cm. wide, abruptly long-acuminate at base into the winged petiole.

The type of this variety was collected by William Randolph Maxon (no. 7742) -- in whose honor it is named -- on an open bank near shore of lake, at an altitude of about 300 m. at Laguna de Masaya, Nicaragua, on July 6, 1923, and is deposited in the United States National Herbarium at Washington.

STACHYTARPHETA QUIROSANA Moldenke, sp. nov.

Fruticulus; ramis gracilibus sparsiuscule subadpresso-pilosis; nodis annulatis; foliis ternatis fasciculatis; petiolis subobsoletis vel usque ad 5 mm. longis dense breviterque pubescentibus; laminis tenuiter chartaceis ellipticis vel obovatis, ad apicem acutis, ad basim cuneato-acuminatis, regulariter serratis, supra sparsiuscule adpresso-pilosis non scabris, subtus dense breviterque pubescentibus.

Shrubby; stems slender, obtusely tetragonal (or 5-angled) and rather sparsely pilose with short, white, subappressed, antrorse hairs; nodes annulate; principal internodes 3.5--9.5 cm. long; leaves ternate, usually with several additional small ones on greatly abbreviated twigs in their axils; petioles mostly obsolete on mature leaves, or slender, to 5 mm. long, and densely short-pubescent on small leaves; blades thin-chartaceous, dark-green above, slightly lighter beneath, elliptic or obovate, 2.5--7.5 cm. long, 1--3.2 cm. wide, acute at apex, regularly serrate-dentate with broadly triangular mucronulate teeth from about the middle or below the middle to the apex, cuneately narrowed to the long-

acuminate base, rather sparsely scattered-pilose above with appressed antrorse whitish hair, not scabrous, densely short-pubescent with sordid appressed hairs beneath; midrib slender, flat above, prominent beneath; secondaries very slender, 5 or 6 per side, flat and usually obscure above, arcuate-ascending, prominulous beneath; veinlet reticulation delicate, indiscernible above, flat and often obscure beneath; spikes terminal, solitary, 16--50 cm. long, stout or slender, 5--10 mm. in diameter (exclusive of the corollas), densely many-flowered, the flowers imbricate above, barely so or separate toward the base, somewhat loosely divergent during anthesis; rachis slender or stout, 2--5 mm. in diameter, densely appressed-pilose when young, less so in age, deeply excavated; bractlets lanceolate, 6--7 mm. long, 1--1.3 mm. wide, long-attenuate to a filiform apex, sparsely pilose; corolla hypocrateriform, its tuba about 2 cm. long, its limb about 1--1.5 cm. in diameter.

The type of this species was collected by August Weberbauer (no. 6343) above Curilcás, in the valley of the Quiros, alt. 1700--2000 m., prov. Ayavaca, Piura, Peru, in May, 1912, and is deposited in the herbarium of the Field Museum of Natural History at Chicago.

STACHYTARPHETA RORAIMENSIS Moldenke, sp. nov.

Frutex (?); laminae foliorum chartaceis lanceolatis, ad apicem acutis, ad basim longe acuminatis, regulariter serratis subrevolutis, supra sparse pilosulis et minute pustulato-scabris, subtus densiuscule puberulis; bracteolis lanceolatis longe caudatis minute puberulis vel glabratibus.

Shrubby (?); leaf-blades chartaceous, dark-green above, somewhat lighter beneath, lanceolate, about 10 cm. long and 3.5 cm. wide, acute at apex, regularly and abundantly serrate from below the widest point to the apex with antrorse rounded teeth about 1--2 mm. long and subrevolute-margined, gradually narrowed to the long-acuminate base, the basal acumination entire, sparsely pilosulous above and minutely pustulate, scabrous, rather densely puberulent (especially on the venation) beneath with short sordid hair; midrib slender, subimpressed above, prominent beneath; secondaries very slender, about 7 per side, arcuate-ascending, impressed above, prominulous beneath, not directly joined at the margins; veinlet reticulation abundant, the larger portions subimpressed above and prominulous beneath; spikes stout, about 1 cm. wide (exclusive of the corollas), very densely many-flowered with closely appressed and imbricate flowers; rachis slender, about 2.5 mm. in diameter, glabrate; bractlets lanceolate, about 1 cm. long and 1 mm. wide at the widest point, long-caudate to a filiform apex, very minutely puberulent or glabrate.

The type of this species was collected by Moritz Richard Schomburgk on Mount Roraima, British Guiana, in 1842 or 1843 and is deposited in the herbarium of the Royal Botanic Gardens at Kew, a fragment in the herbarium of the Field Museum of Natural History at Chicago.

VERBENA HALEI f. ROSEIFLORA (Benke) Moldenke, comb. nov.

Verbena officinalis f. roseiflora Benke, Rhodora 35: 45. 1933.

VERBENA NIVEA Moldenke, sp. nov.

Herba nana procumbens; ramis radiato-patentibus gracillimis densiuscule cinereo-puberulis glabrescentibus; hornotinis densissime breviterque cinereo-pubescentibus; nodis obscure annulatis; foliis oppositis numerosis fasciculatis; petiolis anguste alato-marginatis densiuscule vel sparse cinereo-strigosis; laminis chartaceis ovatis utrinque dense cinereo-strigosis 3-lobatis vel 3-partitis, lobis 2- vel 3-lobulatis, lobulis obtusis revolutis.

Low procumbent herb, branched from the base; branches spreading in radial fashion, very slender, sometimes almost filiform, obtusely subtetragonal, rather densely puberulent with very short spreading cinereous hair, more sparsely so or glabrescent in age, the youngest branchlets very densely short-pubescent with spreading cinereous hairs; nodes faintly annulate; principal internodes 0.5--2.5 cm. long, mostly greatly abbreviated; leaves decussate-opposite, numerous, usually with several much reduced ones in their axils; petioles slender, 1--4 mm. long, flattened, deeply canaliculate above, narrowly winged-margined, rather densely or sparsely strigose with appressed whitish hairs; blades chartaceous, uniformly gray-green on both surfaces, ovate in outline, 4--8 mm. long and wide, densely strigose with appressed whitish antrorse hair on both surfaces, 3-lobed or -parted almost to the base, each division often again 2- or 3-lobed, the lobes all obtuse at apex and revolute-margined; the very slender midrib and secondaries impressed above, slightly prominulous beneath; veinlet reticulation indiscernible on both surfaces; inflorescence terminal, capitate; heads small, many-flowered, dense, subsessile or very short-pedunculate; calyx tubular, 3--4 mm. long, often purplish, densely short-pubescent with whitish rather spreading hair; corolla white, its tube about 5 mm. long, its limb about 2.5--3 mm. in diameter.

The type of this species was collected by Santiago Venturi (no. 10,014) along the highway to San Antonio, Rosario de Lerma, alt. 3000 m., Salta, Argentina, in December, 1929, and is deposited in the Britton Herbarium at the New York Botanical Garden.

CLERODENDRUM TERNIFOLIUM var. MEXIAE Moldenke, Geogr. Distrib. 22, nom. nud. (1939), var. nov.

Haec varietas a forma typica speciei recedit lobis calycis late triangulato-ovatis ad apicem acutis.

This variety differs from the typical form of the species in the calyx-lobes being broadly triangular-ovate and merely acute at apex, instead of long-attenuate and acuminate.

The type was collected by Ynes Mexia (no. 6757) -- in whose honor it is named -- on an overflow flat near sea level between Guayaquil and Salinas, Guayas, Ecuador, between December 10 and 14, 1934, and is deposited in the United States National Herbarium at Washington.

DURANTA PSEUDOREPENS Moldenke, sp. nov.

Frutex; ramulis pergracilibus tetragonis marginatis adpresso-puberulis; foliis oppositis; petiolis gracilibus minute puberulis; laminis subcoriaceis ellipticis vel ovatis, ad apicem rotundatis, ad basim breviter acuminatis, serratis supra glabrescentibus, subtus minutissime puberulis; inflorescentiis terminalibus axillaribusque dense puberulis.

Shrub; branchlets very slender, tetragonal, margined, appressed-puberulent; nodes not annulate; principal internodes 1.5--4.5 cm. long; leaves opposite or subopposite; petioles very slender, 5--6 mm. long, minutely puberulent; blades subcoriaceous, dark-green above, somewhat lighter beneath, elliptic or ovate, 2.8--4.5 cm. long, 1.6--3 cm. wide, rounded at apex, short-acuminate at base, serrate from the widest part to the apex, glabrescent above, very minutely puberulent beneath, revolute, the margins rolled in against the top of the petiole at base; midrib slender, subimpressed above, prominent beneath; secondaries slender, 3 or 4 per side, subimpressed above, sharply prominent beneath, arcuate-ascending; veinlet reticulation sparse, the larger parts subimpressed above and prominulous beneath; inflorescence axillary and terminal, racemiform, the axillary ones two per node, abbreviated, 2--4 cm. long, rather few-flowered, the terminal one about 7.5 cm. long; rachis densely short-pubescent; pedicels slender, 1--2 mm. long, densely short-pubescent; foliaceous bractlets often present, about 5 mm. long and 2.5 mm. wide; prophylla setaceous, 2 mm. long, short-pubescent; calyx tubular, 6--7 mm. long, 3--4 mm. wide, appressed-puberulent, 5-apiculate; corolla-tube curvate, 1--1.3 cm. long.

The type of this species was collected by Richard Spruce (no. 6042) in the Andes of Ecuador, between 1857 and 1859, and is deposited in the Britton Herbarium at the New York Botanical Garden.

DURANTA HITCHCOCKII Moldenke, sp. nov.

Frutex vel arbor; ramulis gracilibus valde spinosis dense adpresso-pubescentibus, pilis cinereis subtomentellis, in senectute dense puberulis, acute vel obtuse tetragonis; spinis oppositis vel ternatis; foliis oppositis vel approximatis vel ternatis coriaceis breviter petiolatis; laminis ellipticis vel obovatis, ad apicem rotundatis minute apiculatis, integris revolutis, ad basim cuneatis, supra minute pilosulis vel glabratis, subtus plusminus dense puberulis glanduloso-punctatis; inflorescentiis axillaribus terminalibusque abbreviatis.

Shrub or small tree, to 4 m. tall; branches and branchlets slender, acutely or obtusely tetragonal, conspicuously spinose, densely appressed-pubescent with cinereous tangled hair, in age merely densely puberulent, opposite or ternate; spines opposite or ternate, slender, 6--20 mm. long, unbranched, very sharp and stiff; nodes not annulate; principal internodes 1--2.5 cm. long; leaves numerous, opposite, approximate, or ternate; petioles very slender, 1--5 mm. long, densely appressed-pubescent; blades coriaceous or subcoriaceous, slightly lighter beneath, elliptic or obovate, 1--2.5 cm. long, 5--13 mm. wide, mostly rounded and minutely apiculate at apex, sometimes subacute, entire and slightly revolute along the margins, cuneate at base and usually prolonged into the petiole, minutely pilosulous above or glabrate in age, more or less densely puberulent and glandular-punctate beneath; midrib slender, impressed above, prominent beneath; secondaries very slender, 2 or 3 per side, ascending, not much arcuate, obscure or subimpressed above, prominent beneath; veinlet reticulation indiscernible on either surface; inflorescence axillary and terminal, racemiform, abbreviated, few-flowered; calyx tubular, about 5 mm. long and 2 mm. wide, densely short-pubescent; corolla-tube about 12 mm. long, its limb about 10 mm. wide, sweet-scented, pale-blue or lilac.

The type of this species was collected by this distinguished American botanist, Albert Spear Hitchcock (no. 20821) -- in whose honor it is named -- between Otavalo and Malchinguí, Imbabura or Pichincha, Ecuador, at an altitude of 2400--3000 m., on August 12, 1923, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is also known from Chimborazo and Bolívar.

DURANTA PENLANDI Moldenke, sp. nov.

Frutex spinosus; ramis gracilibus debilibus; ramulis acute tetragonis marginatis minutissime puberulis glabrescentibus ut videtur inermibus; foliis verticillatis; petiolis brevibus subglabratis; laminis subcoriaceis ellipticis abrupte acutis supra mediam serratis subrevolutis, infra mediam integris valde revolutis, ad basim breviter acuminatis,

utrinque glabris; inflorescentiis numerosis racemiformibus ubique minutissime puberulis glabrescentibus.

Spiny shrub; branches slender, weak, to 3 m. long; branchlets slender, acutely tetragonal, margined, very minutely puberulent, soon glabrescent, apparently unarmed; nodes not annulate; principal internodes 3--4 cm. long; leaves whorled in 4's; petioles very slender and short, 2--4 mm. long, subglabrate; blades coriaceous, dark-green and lustrous above, slightly lighter beneath, elliptic, 1.9--3.8 cm. long, 1.2--2.1 cm. wide, abruptly acute at apex, short-acuminate at base, uniformly serrulate from about the middle to the apex with small appressed sharp-pointed teeth and subrevolute, entire and pronouncedly revolute from about the middle to the base, the two margins rolled in against the top of the petiole in characteristic fashion, glabrous on both surfaces; midrib slender, subimpressed above, sharply prominent beneath; secondaries slender, 4--7 per side, subimpressed above, sharply acute beneath; veinlet reticulation very sparse, obscure or indiscernible on both surfaces; inflorescences axillary, racemiform, 4 per node, 3.5--9 cm. long, rather loosely many-flowered, the flowers subsecund; rachis and peduncles sharply tetragonal, very minutely puberulent, glabrescent; pedicels 2--4 mm. long, very minutely puberulent or glabrescent; prophylla minute, setaceous, 1--2 mm. long; calyx tubular, 6--7 mm. long, about 4 mm. wide, 5-apiculate, very minutely puberulent, bluish-purple and green; corolla pale blue-lilac, its tube curvate, about 1 cm. long; fruit tough, juicy, dull-yellow, splitting the mature calyx.

The type of this species was collected by Charles William Theodore Penland and Robert H. Summers (no. 958) in the vicinity of Tambillo, at an altitude of 2800 m., Fichincha, Ecuador, on June 26, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is named in honor of its distinguished senior collector.

LANTANA GLAZIOVII Moldenke, sp. nov.

Herba perennis nana, ad basim lignosa; ramis erectis pergracilibus, simplicibus densissime lanato-pubescentibus; foliis oppositis paucis sessilibus; laminis ellipticis vel subrotundis, ad basim et apicem acutis vel obtusis, subintegris vel serrulatis, utrinque dense lanato-pubescentibus.

Very dwarf perennial herb, woody at base, to about 12 cm. tall, gnarled at base; stems several or numerous, erect, very slender, simple, very densely lanate-pubescent with white or cinereous hairs; leaves decussate-opposite, few, sessile; blades thin-chartaceous, elliptic or subrotund, 4--14 mm. long, 3--6 mm. wide, acute or obtuse at both ends, varying from subentire to uniformly serrate with small blunt

teeth from almost the base to the apex, densely lanate-pubescent with albidous hairs on both surfaces; inflorescence axillary; capitulae abundant in all the upper leaf-axils, solitary, opposite; peduncles very slender, 1--3 cm. long, ascending, densely hirsutulous-pubescent with whitish hairs; corolla-tube about 7 mm. long, its limb about 3 mm. wide.

The type of this species was collected by Auguste François Marie Glaziou (no. 21,892) -- in whose honor it is named -- on the central plateau of Goyaz, Brazil, in 1894 or 1895, and is deposited in the Delessert Herbarium at the Conservatoire Botanique at Geneva.

LANTANA HAUGHTII Moldenke, sp. nov.

Frutex; ramis gracilibus tetragonis dense adpresso-puberulis glabrescentibus; foliis oppositis; petiolis gracilibus dense breviterque albidopubescentibus; laminis firme chartaceis lanceolatis obtusis regulariter serrulatis, ad basim acutis vel acuminatis, supra bullatis dense adpresso-strigosis, subtus densissime velutino-tomentellis; inflorescentiis axillaribus capitatis ubique dense canescentopuberulis vel breviter pubescentibus; bracteolis magnis late ellipticis vel ovatis.

Shrub; branchlets slender, obtusely or acutely tetragonal, densely appressed-puberulent, glabrescent in age; nodes not annulate; leaf-scars large, corky, divergent; principal internodes 1--7.5 cm. long; leaves decussate-opposite, often with several much smaller ones borne on much abbreviated twigs in their axils; petioles very slender, 4--8 mm. long, densely short-pubescent with whitish hairs; blades firmly chartaceous, dark-green above, gray-green beneath, lanceolate or elliptic-ovate, 1--3.5 cm. long, 0.7--2 cm. wide, obtuse at apex, regularly serrulate, acute or acuminate at base, bullate and densely appressed-strigose above, very densely velutinous-tomentellous beneath with sordid or whitish hairs; midrib slender, impressed above; prominent beneath; secondaries slender, 4--6 per side, ascending, not much arcuate, deeply impressed above, slightly prominulous beneath; veinlet reticulation abundant, deeply impressed above, prominulous or hidden by the tomentum beneath; inflorescence axillary, capitate; peduncles very slender, 2 per node, 3--6 cm. long, densely appressed-pubescent or albidous-puberulent; heads densely many-flowered, 1--1.5 cm. in diameter; bractlets large, conspicuous, broadly elliptic or ovate, to 9 mm. long and 4 mm. wide, acute at apex, densely canescent-puberulent or substrigose; corolla white, its tube about 7 mm. long, its limb about 3 mm. wide.

The type of this species was collected by Oscar Haught (no. 132) -- in whose honor it is named -- in the Amotape Hills, Piura, Peru, in November, 1927, and is deposited in

the Britton Herbarium at the New York Botanical Garden.

LANTANA PAVONII Moldenke, sp. nov.

Frutex; ramulis sarmentisque gracillimis sparsissime hirsutis; foliis oppositis; petiolis gracilibus alatis sparse hirsutis; laminis chartaceis ellipticis vel subrotundis acutis serrulatis, ad basim acuminatis, supra sparsiuscule hirsutulis (in senectute scabris bullatis), subtus dense hirsutis.

Low shrub (?); branchlets and twigs very slender, very sparsely hirsute with scattered hairs; leaves decussate-opposite; petioles slender, 2--5 mm. long, hirsute with scattered hairs, alate-margined; blades chartaceous, elliptic or subrotund, 1.2--3 cm. long, 7--15 mm. wide, acute (or obtuse) at apex, rather densely serrate from the widest part (or below) to the apex with very small rounded teeth, acuminate at base, rather sparsely hirsutulous above, becoming very rough and bullate in age, more densely hirsute (especially along the venation) beneath; inflorescence axillary, 2.5--3.5 cm. long, solitary, opposite, ascending; peduncles very slender, 2--2.8 cm. long, hirsutulous like the twigs, capitulae to 8 mm. long and 19 mm. wide.

The type of this perplexing species was collected by José Antonio Pavon -- in whose honor it is named -- somewhere in Peru, and is deposited in the Delessert Herbarium at the Conservatoire Botanique at Geneva. It was named "Lantana scabra Pavon, n. sp." by the collector.

LANTANA RUBELLA Moldenke, sp. nov.

Frutex; ramulis gracilibus tetragonis marginatis; sarmentis pergracillimis numerosis abbreviatis dense breviterque pubescentibus; foliis oppositis; petiolis gracillimis brevibus adpresso-puberulis; laminis submembranaceis ellipticis obtusis supra mediam serrulatis, ad basim acutis, supra minutissime puberulis vel glabrescentibus, subtus puberulis dense glanduloso-punctatis; inflorescentiis axillaribus subspicatis; bracteolis oblanceolatis; calycibus dense hirsutis.

Erect shrub, to 2.5 m. tall; branchlets slender, obtusely or subacutely tetragonal, margined (the margins coming loose and splitting off in age), densely short-pubescent with brownish hairs, glabrescent in age; twigs very slender, numerous, abbreviated, densely short-pubescent; nodes annulate; principal internodes on twigs 3--12 mm. long, on branchlets to 5.5 cm. long; leaves decussate-opposite, numerous; petioles very slender, short, 1--5 mm. long, appressed-puberulent with dark brownish hairs; blades submembranous, dark-green above, much lighter beneath, elliptic, 1--2.3 cm. long, 3--10 mm. wide, obtuse at apex, serrulate from the widest part to the apex with subacute teeth, acute at base,

very minutely puberulent or glabrescent above, puberulent and densely glandular-punctate beneath; midrib very slender, usually subimpressed above, prominulous beneath; secondaries very slender, usually subimpressed above, 3 or 4 per side, subprominulous beneath; veinlet reticulation obscure or indiscernible above, plane beneath; inflorescence axillary, subspicate, few-flowered; peduncles very slender, 5--15 mm. long, appressed-pubescent; bractlets oblanceolate, about 5 mm. long and 1.5 mm. wide, rounded or truncate at apex, appressed-puberulent; calyx densely spreading-hirsute and resinous-punctate; corolla deep-pink, its tube about 5 mm. long, its limb about 2 mm. wide.

The type of this species was collected by Ynes Mexia (no. 5845) in a shallow moist valley at Diamantina, on the upper slope of the Serra do Rio Grande, at an altitude of about 1290 m., Minas Geraes, Brazil, on May 15, 1931, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LANTANA TOMASII Moldenke, sp. nov.

Fruticulus; ramis ramulisque mediocriter gracilibus obtuse tetragonis dense puberulis; foliis oppositis; petiolis gracilibus dense tomentellis; laminis chartaceis vel submembranaceis ovatis vel subacuminatis, regulariter serratis, ad basim acutis vel rotundatis, supra scabropilosis subbullatis, subtus dense tomentellis; inflorescentiis axillaribus capitatis; bracteolis magnis oblongo-ovatis dense breviterque pubescentibus.

Shrubby, about 80 cm. tall; branches and branchlets medium-slender, obtusely tetragonal, unarmed, densely puberulent or tomentellous; nodes annulate; principal internodes 1--9 cm. long; leaves decussate-opposite; petioles slender, about 1 cm. long, densely tomentellous; blades chartaceous or submembranous, ovate, 3--11 cm. long, 2--6 cm. wide, acute or subacuminate at apex, regularly serrate from apex almost to the base, rounded at base or acute when immature, scabrous-pilose and subbullate above, densely tomentellous beneath; the slender midrib, secondaries, and veinlet reticulation impressed above and prominulous beneath; inflorescence axillary, capitate, densely many-flowered, about 1.5 cm. long and wide; bractlets large and conspicuous, the lowermost oblong-ovate, about 1 cm. long and 6 or 7 mm. wide, densely short-pubescent, obtuse at apex; corollas about 9 or 10 mm. long, purple.

The type of this species was collected by Brother Tomas (no. 579) -- in whose honor it is named -- at Béelo, Antioquia, Colombia, on June 14, 1939, and is deposited in the United States National Herbarium at Washington. It is obviously closely related to Lantana boyacana Moldenke,

LANTANA VELUTINOIDES Moldenke, sp. nov.

Frutex; ramulis gracilibus acute tetragonis densiuscule pubescentibus; foliis ternatis; petiolis gracilibus dense pubescentibus; laminis chartaceis lanceolato-ovatis, ad apicem acutis vel breviter acuminatis, ad basim rotundatis, regulariter serratis, supra dense pubescentibus, subtus densissime velutino-tomentosis; inflorescentiis axillaribus perabbreviatis spicatis; bracteolis ovatis dense breviterque pubescentibus.

Shrub; branchlets slender, rather acutely tetragonal, rather densely short-pubescent; nodes not annulate; principal internodes 2.5--3.5 cm. long; leaves ternate; petioles slender, about 5 mm. long, densely short-pubescent; blades chartaceous, dark-green above, very much lighter beneath, lanceolate-ovate, 3--4.5 cm. long, 1.5--2 cm. wide, acute or short-acuminate at apex, regularly serrate from base to apex with small rounded teeth, rounded at base, densely short-pubescent with appressed hairs above, very densely velutinous-tomentose with sordid hairs beneath; midrib slender, impressed above, prominulous beneath; secondaries very slender, impressed above, prominulous beneath, 4--6 per side, arcuate-ascending; veinlet reticulation very abundant, impressed above, prominulous beneath and plainly visible through the tomentum; inflorescence axillary, much shorter than the subtending leaves, exceeding the petioles, 1.5--2.4 cm. long, capitata-spicate, densely many-flowered; peduncles slender, 5--9 mm. long, densely short-pubescent; bractlets conspicuous, ovate, about 5 mm. long and 3 mm. wide, densely short-pubescent with cinereous hairs, sharply acute at apex.

The type of this species was collected by H. Luederwaldt [Herb. Instit. Biol. S. Paulo 15,669] at Ipiranga, São Paulo, Brazil, in March, 1912, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LANTANA VELUTINOIDES var. *BRUCHII* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis inflorescentiisque oppositis, pedunculis usque ad 4.5 cm. longis, spicis usque ad 3 cm. longis, et bracteolis usque ad 8 vel 9 mm. longis et latis.

This variety differs from the typical form of the species in having its leaves and inflorescences opposite, peduncles to 4.5 cm. long, spikes to 3 cm. long, and bractlets to 8--9 mm. long and wide.

The type of this variety was collected by C. Bruch (no. 2831) -- in whose honor it is named -- at Unquillo, Córdoba, Argentina, in 1926, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LIPPIA ASPERRIMA var. *ROTUNDATA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum ad apicem obtusis vel rotundatis.

This variety differs from the typical form of the species in having its leaf-blades obtuse or rounded at the apex. The petioles are 1--4 mm. long, margined; leaf-blades elliptic, 1.8--3.7 cm. long, 1.2--2.4 cm. wide, regularly serrate almost to the base with blunt teeth, acute at base and prolonged into the short petiole; venation decidedly impressed above, only the midrib and secondaries slightly prominulous beneath; peduncles 3--3.5 cm. long; branchlets densely glandular-pubescent with short dark hairs and also copiously hirsute with white spreading hairs twice as long, less densely so in age. The hairs on the upper leaf-surface apparently become bulbous-based in age, first along the margins, finally over the entire lamina. The upper leaf-surface is scabrous at all times.

The type of this variety was collected by Frederico Carlos Hoehne at Ponta Grossa, Paraná, Brazil, on November 1, 1928, and is deposited in the herbarium of the Instituto Biologico de Defesa Agricola e Animal at São Paulo [no. 23268]

LIPPIA HOEHNEI Moldenke ex Hoehne, Resen. Hist. Comm. Vigés. Anniv. Secc. Bot. 153 & 161, hyponym (1937), sp. nov.

Fruticulus; ramulis sarmentisque gracilibus ubique dense puberulis; foliis oppositis sessilibus amplexicaulibus; laminis suborbicularibus rotundatis, ad basin cordatis, regulariter serratis vel sinuatis, supra nitidulis minute puberulis, subtus densiuscule pubescentibus; inflorescentiis axillaribus terminalibusque paniculatis; bracteis magnis ovatis sessilibus acutis integris vel serratis; capitulis densis breviter pedunculatis confertis.

Shrubby; branchlets and twigs slender, ascending, buff-colored, densely puberulent throughout with very short erect brownish hairs; nodes annulate; leaves decussate-opposite, sessile, clasping at base; blades suborbicular, 3--6 cm. long and wide, rounded (in outline) at apex, cordate at base, regularly serrate from base to apex with appressed and bluntish teeth or sinuate below, the very apex often marked with a sharply acute or acuminate tooth, minutely puberulent and rather shiny above, rather densely spreading-pubescent on the whole venation beneath; midrib, secondaries, and vein and veinlet reticulation subimpressed above, very prominent and conspicuous beneath in a beautiful reticulum; inflorescence axillary and terminal, clustered in a dense panicle at the tips of the branches, the inflorescence-branches erect or ascending, conspicuously bracteate with large ovate sessile and entire or serrate acute bracts; capitulae dense, short-pedunculate, crowded.

The type of this handsome species was collected by Fred-

erico Carlos Hoehne [Com. Rondon 2177] -- in whose honor it is named -- at Três Jacús, Mattogrosso, Brazil, in 1908, and is deposited in the herbarium of the Instituto Biologico de Defesa Agricola e Animal at São Paulo.

LIPPIA MATTOGROSSENSIS Moldenke, sp. nov.

Herba (?) perennis; ramulis gracilibus obtuse tetragonis dense hirsutis; foliis oppositis; petiolis gracilibus dense hirsutis; laminis tenuiter chartaceis ovatis vel elliptico-ovatis acutis serratis, ad basim acutis vel rotundatis, supra hirsutis, subtus dense hirsuto-tomentosis; inflorescentiis axillaribus capitatis confertis; capitulis densis.

Herb (?) or shrub; branchlets slender, obtusely tetragonal, brown, densely hirsute with long white hairs (1--1.3 mm. long), rather twiggy; principal internodes 3--4.5 cm. long; leaves decussate-opposite; petioles slender, 4--10 mm. long, densely hirsute like the branchlets; blades thin-chartaceous, dark-green, lighter beneath, elliptic-ovate or ovate, 2--5.5 cm. long, 1.2--2.6 cm. wide, acute, serrate from base to apex with small blunt teeth (6--9 per cm. of margin), acute or rounded at base, hirsute above with hairs precisely like those on the branchlets, twigs, and petioles, densely hirsute-tomentose beneath with somewhat shorter tangled whitish or cinereous hairs and also densely granular-pulverulent and resinous; midrib slender, flat or obscurely subimpressed above, prominulous beneath; secondaries slender, 6--10 per side, usually irregular, arcuate-ascending, slightly subimpressed above, prominulous beneath; vein and veinlet reticulation abundant, rather obscurely subprominulous above, prominulous and dark beneath; inflorescence axillary, capitate, numerous, 4--6 in each upper leaf-axil (rarely reduced to 1 per axil in the lowermost axils of the twigs); peduncles very slender, 5--16 mm. long, densely long-hirsute like the twigs; heads dense, 4--10 mm. long, 7--9 mm. wide.

The type of this species was collected by Frederico Carlos Hoehne [Com. Rondon 470] at Coxipó da Ponte, Mattogrosso, Brazil, in March, 1911, and is deposited in the herbarium of the Instituto Biologico de Defesa Agricola e Animal at São Paulo.

LIPPIA MICROMERA var. *PALUDICOLA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit ramulis sarmentisque tantum pulverulento-punctatis (non patento-pubescentibus), foliis angustis integris tantum pulverulento-punctatis (non breviter pubescentibus vel puberulis).

This variety differs from the typical form of the species in having its branchlets and twigs merely densely pulverulent-punctate, instead of spreading short-pubescent, and in having its petioles and the very narrow and entire leaf-

blades also merely pulverulent-punctate on both surfaces, instead of short-pubescent or puberulent.

The type was collected by Jacques Samuel Blanchet (no. 2872) in swamps at Ilhabina, Bahia (?), Brazil, in 1839, and is deposited in the Meisner Herbarium at the New York Botanical Garden.

PETREA DUCKEI Moldenke, sp. nov.

Frutex scandens; ramis gracilibus minute puberulis glabrescentibus; foliis oppositis; petiolis crassis minute puberulis; laminis firme chartaceis ellipticis acutis vel breviter acuminatis integris, ad basim acutis vel obtusis, utrinque minutissime puberulis glabrescentibus scabrellis, inflorescentiis axillaribus racemiformibus; lobis calycis permarginis, in fructu late ellipticis.

Scandent shrub; branches slender, grayish, minutely puberulent glabrescent in age, somewhat lenticellate; nodes not annulate; principal internodes 1.2--11.5 cm. long; leaves decussate-opposite; petioles stout, 3--12 mm. long, minutely puberulent, flattened above; blades firmly chartaceous, stiff, rather uniformly gray-green on both surfaces, somewhat shiny above, elliptic, 10.5--16 cm. long, 4.3--8 cm. wide, abruptly acute or short-acuminate at apex (the very point often obtuse), entire, acute or rounded at base, very minutely puberulent and scabrellous on both surfaces, glabrescent and merely punctate in age, the immature blades very thin-membranous and nigrescent in drying; midrib rather stout at base, rapidly diminishing in size as the apex is approached, prominent on both surfaces; secondaries very slender, 9--15 per side, prominulous above, sharply prominent beneath; vein and veinlet reticulation abundant, prominulous on both surfaces, the tertiaries sharply prominent beneath; inflorescence axillary, racemiform, 14--25 cm. long, rather loosely many-flowered; rachis slender, minutely puberulent; pedicels slender, 2--5 mm. long, elongate to 9 mm. in fruit, minutely puberulent; calyx subtended by 1--3 foliaceous prophylla, which are thin-membranous, elliptic, venose, 5--6 mm. long, 3--4 mm. wide, sharply acute or attenuate-acuminate at apex; fruiting-calyx indurated, its tube 6--7 mm. long, 5--7 mm. wide at apex, very minutely puberulent, its lobes greatly enlarged, broadly elliptic, to about 13 mm. long and 12 mm. wide, pinnately venose, very minutely and obscurely puberulent, abruptly acute or obtuse at apex.

The type of this species was collected by Adolfo Ducke [Herb. Jard. Bot. Rio de Janeiro 22,542] -- in whose honor it is named -- on inundated shores at Paraná de Anavilhana, on the lower Rio Negro, Amazonas, Brazil, on July 24, 1939, and is deposited in the Britton Herbarium at the New York

Botanical Garden. The species is obviously closely related to *P. insignis* Schau.

STACHYTARPHETA AUSTRALIS Moldenke, Prelim. Alph. List Invalid Names 42, hyponym (1940), sp. nov.

Fruticulus; ramis gracilibus obtuse tetragonis glabrescentibus; ramulis gracilibus plusminus breviter pubescentibus; foliis oppositis; petiolis gracilibus adpressopubescentibus; laminis chartaceis ellipticis acutis argute serratis, ad basim cuneato-attenuatis, supra dense puberulis scabrellis, subtus breviter adpresso-pubescentibus; spicis dense multifloris ubique plusminus pilosis, floribus in rhachidem non valde immersis.

Shrubby; branches slender, rather obtusely tetragonal, glabrous or subglabrate in age, light-gray; branchlets very slender, brownish, more or less densely short-pubescent; nodes not annulate; principal internodes 1--5.5 cm. long; leaves decussate-opposite, small; petioles very slender, 3--8 mm. long, appressed-pubescent; blades chartaceous, brunnescens above in drying, somewhat lighter beneath, elliptic, 1.5--4.5 cm. long, 1--2 cm. wide, acute at apex, regularly serrate from almost the base to the apex with sharply acute small antrorse teeth, cuneate-attenuate at base and prolonged into the petiole, densely puberulent and scabrellous above, appressed-pubescent beneath with short hair often more dense on the larger venation; midrib slender, plane or impressed above, prominulous beneath; secondaries very slender, 4--6 per side, arcuate-ascending, plane or impressed above, prominulous beneath; veinlet reticulation indiscernible above, usually obscure beneath; inflorescence spicate, terminal, to about 20 cm. long, densely many-flowered; rachis very slender, more or less densely whitish-pilose; bractlets lanceolate, about 5 mm. long, scarious-margined, long-attenuate, more or less pilosulous-ciliate; flowers not deeply imbedded in the rachis.

The type of this species was collected by Svhreiter [Herb. Mus. Argent. Cienc. Nat. 26/1347] at Tartagal, in the department of Crán, Salta, Argentina, on September 29, 1925, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is common in southern South America and is known from many localities in Brazil, Paraguay, Uruguay, and Argentina, as well as in Hawaii and Java.

STACHYTARPHETA AZUREA Moldenke, sp. nov.

Fruticulus (?); foliis approximatis ellipticis sessilibus, ad apicem rotundatis, ad basim cuneatis serratis subrevolutis glabratis vel minute puberulis; inflorescentiis terminalibus elongatis spicatis longissime pedunculatis densissime multifloris.

Shrubby (?); stems and branches not seen; uppermost leaves approximate, the members of the pair about 3 cm. apart, sessile, broadly elliptic, firmly chartaceous, 9--10 cm. long, 4--5 cm. wide, rounded at apex, cuneate to the clasping base, regularly serrate from below the middle to the apex with rather bluntish teeth and subrevolute, glabrous or minutely puberulent on both surfaces; inflorescence terminal, spicate, elongate, long-pedunculate; peduncles stout, about 19 cm. long, glabrate or minutely puberulent; floriferous portion of the spike rather stout, 28--29 cm. long or longer, about 1 cm. in diameter, very densely many-flowered, the flowers closely overlapping; rachis excavated; bractlets lanceolate, about 1 cm. long, long-aristate at apex, glabrate or minutely puberulent; corollas blue.

The type of this species was collected by Frederico Carlos Hoehne [Comissão Rondon no. 692] at Porto Esperidião, Mattogrosso, Brazil, in November, 1908, and is deposited in the herbarium of the Instituto Biologico de Defesa Agricola e Animal at São Paulo.

STACHYTARPHETA BOLDINGHII Holdenke, sp. nov.

Fruticulus; ramulis subteretibus obscure puberulis; foliis oppositis sessilibus; laminis ellipticis, ad apicem rotundatis, ad basim cuneatis, marginibus regulariter serratis, supra glabratis, subtus minute puberulis et dense punctatis; inflorescentiis terminalibus spicatis elongatis densissime multifloris; floribus imbricatis; rachide profunde excavato; bracteolis anguste ellipticis longe aristulatis glabris.

Shrubby; branchlets subterete, obscurely puberulent; nodes not annulate; leaves opposite or subopposite, sessile; blades chartaceous, somewhat lighter beneath, elliptic, the uppermost ones 1.5--2.5 cm. long, 0.7--1.5 cm. wide, rounded at apex, cuneate at base, regularly serrate from the widest part to the apex with acute or bluntish teeth, minutely strigillose or subglabrate above, minutely puberulent and densely punctulate beneath; midrib and the 2 or 3 pairs of secondaries very slender, subimpressed above, prominulous beneath; veinlet reticulation obscure or indiscernible on both surfaces; inflorescence terminal, spicate, elongate, to 37 cm. long, very densely many-flowered, the flowers closely imbricate and deeply sunken in the rachis; rachis rather stout, about 3 mm. wide, glabrous, deeply excavated during and after anthesis; bractlets large, abundant, conspicuous, narrow-elliptic, about 7 mm. long and 1.5 mm. wide, long-aristulate at apex, scarious in a wide band along the margins, glabrous; corolla-tube about 1 cm. long.

The type of this species was collected by Isaac Boldingh (no. 6352) -- in whose honor it is named -- on the island of

Aruba in 1909 or 1910 and is deposited in the Britton Herbarium at the New York Botanical Garden.

STACHYTARPHETA ELATICOR var. JENMANI Moldenke, Suppl. List Common Names 7, nom. nud. (1940), var. nov.

Haec varietas a forma typica speciei recedit foliis utrinque plusminus hirsutis.

This variety differs from the typical form of the species in having both surfaces of its leaf-blades more or less short-hirsute, sometimes rather densely so, instead of glabrous. The stems and branches are sometimes also more or less hirsute.

The type was collected by George Samuel Jenman (no. 5542) -- in whose honor it is named -- at Muinatta on the Rupununi River, British Guiana, in October, 1889, and is deposited in the Columbia University Herbarium at the New York Botanical Garden. It is known also from Quariço, Venezuela, and reminds one of *S. Calderonii* Moldenke from Central America and *S. pycnodonta* Urb. from the West Indies. The corollas are described as purple. A vernacular name is "esponjilla".

STACHYTARPHETA MAXIMILIANI var. CILIARIS Moldenke, var. nov.

Haec varietas a forma typica speciei recedit rhachide calycibusque sparsissime pilosis et bracteolis tantum sparsiuscule ciliatis.

This variety differs from the typical form of the species in having the rachis and calyxes very sparsely pilose with short and widely scattered obscure whitish hairs and the bractlets glabrous except for the sparsely and irregularly ciliate margins.

The type was collected by Lyman Bradford Smith (no. 1420) along a path on the brook trail between Faineiras and Jardim Botânico, at an altitude of 100--400 m., Rio de Janeiro, Federal District, Brazil, on December 4, 1928, and is deposited in the Britton Herbarium at the New York Botanical Garden

STACHYTARPHETA MEXIAE Moldenke, sp. nov.

Fruticulus; ramis ramulisque obtuse tetragonis crassiusculis densissime sordido-hirsutulis; foliis oppositis; petiolis brevibus densissime sordido-hirsutulis; laminis chartaceis ovatis acutis regulariter serratis, ad basim rotundatis, supra dense velutinoso-pubescentibus, subtus densissime sordido-vel canescento-tomentosis; spicis abbreviatis terminalibus densissime multifloris ubique densissime albidohirsutulis; bracteolis anguste lanceolatis elongatis.

Shrubby, to 3.3 m. tall, with loosely spreading branches; branches and bractlets rather stoutish, obtusely tetragonal, very densely hirsutulous with sordid-gray or brownish hairs; nodes not annulate; principal internodes 3--7 cm.

long; leaves opposite; petioles short, 5--9 mm. long, very densely sordid-hirsutulous; blades chartaceous, dark-green above, grayish beneath, ovate, 2--5 cm. long, 1.5--3 cm. wide, acute at apex, regularly serrate from base to apex with rather small acute teeth, rounded at base or often slightly prolonged into the petiole at the middle, densely velutinous-pubescent above with more or less appressed and forward-pointing hairs, very densely sordid- or whitish-tomentose beneath; midrib slender, plane above, prominulous beneath; secondaries slender, plane above, 4--7 per side, ascending, slightly arcuate, prominulous beneath; veinlet reticulation indiscernible above, plain beneath; inflorescence terminal, spicate; spikes sessile, short, 5--9 cm. long, stout (about 1.5 cm. wide), very densely many-flowered; rachis very densely canescent-hirsutulous; bractlets dense, conspicuous, very narrowly lanceolate, elongate, 10--13 mm. long, densely canescent-hirsutulous, attenuate at apex; corolla bright-blue, about 2 cm. long.

The type of this species was collected by Ynes Mexia (no. 5824) -- in whose honor it is named -- on damp ground in the edge of a tangle on an overgrown slope at Christais, Diamantina, at an altitude of 1160 m., Minas Geraes, Brazil, on May 13, 1931, and is deposited in the Britton Herbarium at the New York Botanical Garden.

STACHYTARPHETA PERUVIANA Moldenke, sp. nov.

Herba perennis; ramulis gracilibus glabratis nitidis; foliis membranaceis ovatis acutis serratis, ad basim longe acuminatis, utrinque glabris nitidis; spicis terminalibus elongatis pergracilibus ubique glabris.

Perennial herb, to about 1 m. tall; branches very slender, glabrous, shiny, obtusely tetragonal, stramineous; nodes not annulate; principal internodes 5.5--11.5 cm. long; leaves decussate-opposite; petioles slender, indistinct, winged, about 1 cm. long, glabrous; blades thin-membranous, uniformly bright-green and shiny on both surfaces, ovate, 8--10 cm. long, 4--5.5 cm. wide, acute at apex, rather uniformly and coarsely serrate from almost the base of the expanded portion to the apex with broadly triangular subacute and minutely apiculate teeth, very long-acuminate at base and indistinguishably attenuate into the petiole, glabrous on both surfaces; midrib slender, plane above, flattened and hardly prominulous beneath; secondaries very slender, 5--7 per side, ascending, not much arcuate, plane on both surfaces; veinlet reticulation sparse, obscure above, plane beneath; inflorescence terminal, spicate; peduncles very abbreviated or obsolete, glabrous; rachis very slender, glabrous, 23--30 cm. long; bractlets lanceolate, about 4 mm. long, shorter than the calyx, long-attenuate at apex, scari-

ous-margined near the base, glabrous; fruiting-calyx rather deeply impressed in the excavated rachis; corolla pinkish-blue, paler at the center within, its tube about 7 mm. long, extremely slender, its limb about 4 mm. wide.

The type of this distinctive species was collected by Ellsworth Paine Killip and Albert Charles Smith (no. 22853), at the edge of a dense forest along the beach, at an altitude of 400 m., near Kimpitiriki, in the Río Apurimac valley, Ayacucho, Peru, on May 10, 1929, and is deposited in the herbarium of the Field Museum at Chicago.

STACHYTARFETA SPRUCEI Moldenke, sp. nov.

Fruticulus; ramulis acute tetragonis puberulis; foliis oppositis; petiolis gracilibus marginatis canaliculatis puberulis; laminis tenuiter chartaceis brunnescentibus ovato-ellipticis acutis vel brevissime acuminatis regulariter serrulatis, ad basim acuminatis, supra sparse strigillosis scabrellis, subtus densissime breviterque pubescentibus vel velutinosus; inflorescentiis terminalibus spicatis breviter pedunculatis; spicis densissime multifloris elongatis ubique dense puberulis; bracteolis anguste lanceolatis, ad apicem longe setulosus.

Shrubby; branchlets acutely tetragonal, densely puberulent; nodes obscurely annulate with a longer band of pubescence; leaves opposite; petioles slender, 1.2--1.5 cm. long, margined, deeply canaliculate above, densely puberulent; blades thin-chartaceous, brunnescent in drying, ovate-elliptic, 4.5--10 cm. long, 2--5 cm. wide, acute or very short-acuminate at apex, regularly serrulate from below the middle to the apex with very much appressed apiculate teeth, acuminate at base, sparsely strigillose and scabrelous above, very densely short-pubescent or velutinous beneath; midrib slender, plane above, prominulous beneath; secondaries slender, 5--8 per side, arcuate-ascending, plane above, prominulous above; veinlet reticulation obscure or indiscernible above, plain beneath; inflorescence terminal, spicate; peduncles short, about 2.5 cm. long, densely puberulent; rachis medium-slender, not excavated, densely puberulent; floriferous portion of the spikes very densely many-flowered, to 22 cm. long, about 1 cm. wide, the flowers densely imbricate; bractlets narrow-lanceolate, about 10 mm. long, long-setulose at apex, densely puberulent, ciliolate along the margins; corolla-tube about 1.5 cm. long.

The type of this species was collected by Richard Spruce (no. 3631) near Maypures, on the Orinoco River, Vichada, Colombia, in June, 1854, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is named in honor of its distinguished and famous original collector, whose name is so indelibly associated with the

natural history of South America.

STACHYTARPHETA STRAMINEA Moldenke, sp. nov.

Subligneous herb; stems more or less tetragonal, flattened at the nodes, rather densely puberulent, glabrescent in age; nodes not annulate; branches similar, slender, densely puberulent; principal internodes 3.5--6.5 cm. long; leaves decussate-opposite; petioles 0.6--2 cm. long, broadly alate, sparsely pilosulous-puberulent; blades thin-chartaceous, ovate-elliptic or ovate, 3--5 cm. long, 1.8--3 cm. wide, acute at apex, abruptly acuminate into the petiole at base, regularly serrate except at the very base with broadly triangular apiculate teeth, very minutely puberulent on both surfaces with obscure and scattered hairs on the lamina, more densely so on the larger venation; midrib slender, plane above, very slightly prominulous beneath; secondaries slender, 3--6 per side, ascending, plane on both surfaces, arcuately joined near the margins; veinlet reticulation obscure or plane on both surfaces; spikes terminal, 8--26 cm. long, slender, many-flowered, erect; peduncles very short, usually about 1 cm. long, canescent-puberulent; rachis slender, excavated, densely or sparsely canescent-puberulent; flowers overlapping, closely appressed; bractlets lanceolate, about 5 mm. long, about 0.75 mm. wide at base, long-attenuate to the setaceous apex, glabrous, usually stramineous, scarious-margined on the lowest 1/3; calyx 4--5 mm. long, stramineous, glabrous; corolla small, 8--10 mm. long.

Herba sublignosa; ramis densiuscule puberulis glabrescentibus; petiolis late alatis sparse pilosulo-puberulis; laminis ovatis vel ovato-ellipticis acutis, ad basim abrupte acuminatis serratis utrinque minute puberulis; bracteolis lanceolatis setaceo-attenuatis glabris stramineis.

The type of this species was collected by José Cuatrecasas (no. 2627) somewhere in Colombia and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is apparently closely related to the common and widely distributed *S. cayennensis* (L. C. Rich.) Vahl, from which its larger bractlets quickly distinguish it.

STACHYTARPHETA SUBULATA Moldenke, sp. nov.

Herba (?); ramulis gracillimis glabris; foliis oppositis oblongis, ad apicem obtusis vel subacutis, ad basim longe cuneato-attenuatis, supra basim regulariter serratis, utrinque glabris; petiolis obscuris vel alatis; inflorescentiis terminalibus spicatis gracillimis laxe multifloris ubique glabris.

Perennial herb (?); branchlets very slender, obtusely tetragonal or subterete, glabrate; nodes annulate; principal internodes about 5 cm. long; leaves decussate-opposite, usu-

ally with some smaller ones on a very much abbreviated twig in their axils; petioles indistinct, merging into the leaf-base, broadly alate, glabrate; blades membranous, oblong, rather uniformly green on both surfaces, 3--7 cm. long, 1--2 cm. wide, obtuse or subacute at apex, long-cuneate and attenuate at base, regularly serrate along the margins except on the basal acumination, glabrate on both surfaces; inflorescence terminal, spicate, sessile, elongate, very slender, laxly many-flowered; rachis very slender, shallowly excavated, glabrate; flowers barely imbricate; bractlets linear, about 5 mm. long, subulate-setaceous at apex, glabrate.

The type of this species was collected by Jacques Samuel Blanchet (no. 3139a) in Bahia, Brazil, in or before 1840, and is deposited in the herbarium of the Field Museum at Chicago. It was identified as S. dichotoma (Ruiz & Pav.) Vahl and cited under this name by Schauer in De Candolle's "Prodromus". S. dichotoma, however, is synonymous with S. cayennensis and Blanchet's plant is not that species.

STACHYTARHETA TRINITENSIS Moldenke, sp. nov.

Herba perennis; ramis gracilibus obtuse tetragonis densiuscule adpresso-puberulis; foliis oppositis griseo-viridibus; petiolis indistinctis alatis; laminis ellipticis abrupte acutis vel obtusis serratis, ad basim longe attenuato-acuminatis, supra sparsissime albedo-pilosis, subtus in venis majoribus puberulo-pilosis; spicis terminalibus elongatis mediocriter gracilibus; rhachide plusminus adpresso-piloso glabrescente; bracteolis magnis late ellipticis vel oblanceolatis ciliatis, ad apicem scarioso-marginatis.

Perennial herb; branches slender, obtusely tetragonal, rather densely appressed-puberulent with whitish hairs, more densely so at the apex and on youngest parts; nodes not annulate; principal internodes 3--6 cm. long; leaves decussate-opposite, usually with a fascicle of smaller ones on very much abbreviated twigs in their axils; petioles not distinct, a few mm. long, winged and merging into the leaf-base, puberulent; blades thin-chartaceous or membranous, uniformly gray-green on both surfaces, elliptic, 3.5--8.5 cm. long, 1.7--3.7 cm. wide, acute or obtuse at apex, rather uniformly serrate from almost the base of the expanded portion to the apex, long-acuminate at base and attenuate into the petiole, very sparsely white-pilose above, puberulent-pilose beneath especially along the larger venation; midrib slender, plane above, subprominulous beneath; secondaries very slender, about 5 per side, arcuate-ascending, plane above, very slightly prominulous beneath; veinlet reticulation sparse, indiscernible above, mostly obscure beneath; inflorescence terminal, spicate, elongate; peduncles greatly abbreviated, about 2 cm. long, densely appressed-pubescent with short white

hairs; rachis medium-slender, deeply excavated in age, more or less appressed-pilose, more densely so toward the base, glabrescent in age; bractlets large, broadly elliptic or oblanceolate, 7--9 mm. long, 2--3 mm. wide, long-aristate-acuminate at apex, glabrous except for the ciliate margins, scarious and more or less lacerate along the margins from the widest part to the base of the terminal aristula.

The type of this species was collected by Walter Elias Broadway at Tabaquite, Trinidad, on September 20, 1918, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is also known from Margarita Island, Venezuela.

STACHYTARPHETA WEBERBAUERI Moldenke, sp. nov.

Fruticulus; ramis ramulisque acutissime tetragonis subalatis densissime puberulis; nodis annulatis; foliis oppositis subsessilibus; laminis ellipticis acutis vel subacutis regulariter serrulatis, ad basim longe acuminatis, utrinque dense tomentellis; inflorescentiis terminalibus spicatis elongatis densissime multifloris ubique breviter pubescentibus; rhachide excavato; bracteolis oblongo-elongatis.

Shrubby; branches and branchlets very sharply tetragonal, margined or even subulate, very densely puberulent; nodes annulate; principal internodes 1--4 cm. long; leaves opposite, sessile or subsessile; blades chartaceous, uniformly green on both surfaces or slightly lighter beneath, elliptic, 2.2--4 cm. long, 1--2 cm. wide, acute or subacute at apex, long-acuminate at base, regularly serrulate except on the basal petiole-like acumination, densely tomentellous on both surfaces; midrib slender, subimpressed above, prominent beneath; secondaries slender, 5--7 per side, subimpressed above, prominent beneath; veinlet reticulation abundant, usually subimpressed above; inflorescence terminal, spicate; peduncles 0.5--2 cm. long, sharply tetragonal or subulate, densely short-pubescent; rachis deeply excavated during and after anthesis, densely short-pubescent; floriferous portion of spike 7--25 cm. long, very densely many-flowered, 6--10 mm. wide, the flowers closely imbricate; bractlets conspicuous, oblong-elongate, about 1 cm. long, densely short-pubescent, subulate at apex; corolla about 2 cm. long.

The type of this species was collected by August Weberbauer (no. 6178) -- in whose honor it is named -- at an altitude of 1200 m., at Tabaconas on the Marañon river, Cajamarca, Peru, between 1909 and 1914, and is deposited in the Britton Herbarium at the New York Botanical Garden.

VERBENA BALLSII Moldenke, sp. nov.

Herba caespitosa, ad basim lignosa multo-ramosa; ramis

dense pubescentibus; foliis oppositis sessilibus; laminis chartaceis cuneato-obovatis trilobatis (lobis saepe trilobulatis) utrinque dense pubescentibus; inflorescentiis terminalibus magnis capitatis; capitulis globosis densissime multifloris; corollis rubellis; bracteolis linearibus elongatis dense pubescentibus.

Dense many-stemmed plants, woody at base, forming domed tufts to 1 m. across; stems simple or very sparsely branched, 15--22 cm. long, densely pubescent throughout; nodes annulate; principal internodes 1--3 cm. long; leaves opposite, sessile; blades chartaceous, cuneate-obovate, 1--3 cm. long, 1--2.3 cm. wide, rounded in outline at apex and distinctly 3-lobed (each lobe often again 3-lobed, oblong, blunt), long-cuneate to the base, densely short-pubescent with brownish or grayish often gland-tipped hairs on both surfaces, less densely so in age and then often with the pubescence beneath limited to the larger venation; midrib and secondaries impressed above, prominulous beneath; veinlet reticulation practically indiscernible on either surface; inflorescence terminal, apparently compound, but forming an extremely large and dense globular many-flowered head 3.5--5 cm. in diameter; peduncles obsolete or very short; bractlets numerous, linear, about 1 cm. long, very densely spreading-pubescent; calyx tubular, about 5 mm. long, densely spreading-pubescent with whitish gland-tipped hairs; corolla creamy-pink, sweet-scented, its tube about 1 cm. long, its limb about 6 mm. in diameter.

The type of this showy and most distinctive species was collected by Edward K. Balls (no. 6036) -- in whose honor it is named -- in the Chorro valley, near Tilcara, at an altitude of 12,800 feet, Jujuy, Argentina, on February 13, 1939, and is deposited in the United States National Herbarium at Washington. The collector states that it grows among rocks on dry sunny exposures in shaley formations well above the moisture line and that its leaves are gray, softly hairy, loosely clothing the stems.

VERBENA CABRERAE Moldenke, sp. nov.

Herba; caulibus ramisque gracilibus obtuse tetragonis adpresso-pilosis; foliis oppositis; petiolis alatis albido-strigosis; laminis tripartitis, partibus laciniatis vel pinnatifidis, laciniis acutis, utrinque strigoso-pilosis; inflorescentiis terminalibus spicatis, spicis abbreviatis congestis.

Herb; stems and branches slender, obtusely tetragonal, rather sparsely appressed-pilose with whitish hairs; more densely so toward the apex and on younger parts; nodes annulate; principal internodes 2--4 cm. long; leaves decussate-opposite, usually with several smaller ones on very much ab-

breviated twigs in their axils; petioles slender, 5--10 mm. long, winged, white-strigose; blades very thin-chartaceous, uniformly green on both surfaces, ovate in outline, 3--6 cm. long and wide, deeply 3-parted to the base, the divisions lacinate or pinnatifid, the lobes oblong and acute (often sharply so), strigose-pilose with appressed whitish hairs on both surfaces; midrib and secondaries plane or subimpressed above, prominulous beneath; veinlet reticulation indiscernible on both surfaces; inflorescence terminal; peduncles very slender, appressed-strigose, 2.5--4.5 cm. long; spikes abbreviated, congested, many-flowered; calyx narrow-tubular, about 9 mm. long and 1 mm. wide, densely white-strigose; corolla-tube about 12 mm. long, its limb 7--9 mm. wide, blue.

The type of this species was collected by Angel L. Cabrera (no. 4199) -- in whose honor it is named -- at Quebrada del Río Caraparí, department of Orán, Salta, Argentina, on July 15, 1937, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is known also from Tucumán and is a most distinctive species.

VERBENA OCCIDENTALIS Moldenke, sp. nov.

Herba; ramis simplicibus erectis dense hirsuto-pubescentibus, pilis griseis glanduliferis; foliis oppositis fasciculatis; petiolis obsolete vel brevissimis et alatis; laminis chartaceis 3-partitis profunde pinnatifidis utrinque dense griseo-hirsutulis, marginibus subrevolutis.

Herb; stems simple, erect, slender, tetragonal, densely hirsute-pubescent with sordid-grayish gland-tipped hair; principal internodes 1.5--3 cm. long; leaves decussate-opposite, usually with a few smaller ones fascicled in their axils; petioles obsolete or very short and winged; blades chartaceous, uniformly gray-green on both surfaces, 3-parted almost to the winged petiole-like base, each division again deeply pinnatifid, densely hirsutulous-pubescent on both surfaces with grayish hair like that on the stems, sometimes substrigose above, the margins slightly revolute; midrib and secondaries very slender, impressed above, prominulous beneath; veinlet reticulation indiscernible on both surfaces; spike terminal, single, simple, unbranched, 7--8 or more cm. long, very densely many-flowered; peduncles slender, about 3.5 cm. long, densely hirsute-pubescent like the stems; flowers very densely imbricate (except the lowest 2 or 3, which may be arranged in a whorl somewhat separated from the rest of the spike) or more separated so as to be barely imbricate and somewhat divergent in fruit; bractlets large, linear or narrow-lanceolate, 5--8 mm. long, less than 1 mm. wide, densely hirsutulous with gland-tipped hairs like the peduncles; calyx tubular, about 8 mm. long and 2 mm. wide, 5-costate, very thin-textured between the ribs, densely hirsutul-

ous with spreading whitish gland-tipped hairs, its rim 5-apiculate; corolla hypocrateriform, its tube about 1 cm. long.

The type of this species was collected by Andrew Mathews (no. 498) somewhere in Peru in 1834 and is deposited in the Meisner Herbarium at the New York Botanical Garden

VERBENA REINECKII Moldenke, sp. nov.

Herba; caulibus ramisque gracilibus plusminus hirsutulis et puberulis; foliis oppositis breviter petiolatis; laminis ovatis vel ovato-ellipticis profunde laciniatis vel lobatis (lobis obtusis latis), ad apicem subacutis, ad basim in petiolum cuneato-attenuatis, supra sparse scabro-pilosis, subtus in venatio hirsutulis; inflorescentiis axillaribus terminalibusque subcapitatis hirsutulis.

Herb; stems and branches slender, more or less hirsutulous and puberulent, less so in age; principal internodes 1--3 cm. long; leaves opposite; petioles very slender, to 5 mm. long and sparsely hirsutulous, or obsolete; blades chartaceous, rather uniformly bright-green on both surfaces, ovate or ovate-elliptic, 0.5--2.5 cm. long, 0.3--2 cm. wide, subacute at apex, cuneate-attenuate into the petiole at base, deeply laciniate or lobate with broad obtuse lobes, sparsely scabrous-pilose with bulbous-based hairs above, hirsutulous along the venation and margins beneath; midrib and the 2 or 3 secondaries very slender, impressed above, sharply prominulous beneath; veinlet reticulation very sparse, usually obscure; inflorescence axillary and terminal, subcapitate-spicate, 8--15-flowered; peduncles slender, hirsutulous, 1--2.5 cm. long; bractlets much shorter than the calyx, lanceolate, about 4 mm. long and 1 mm. wide, hirsutulous, attenuate at apex; calyx tubular, about 9 mm. long, hirsutulous, the hairs sometimes gland-tipped; corolla-tube about 1.5 cm. long, its limb to 1 cm. in diameter.

The type of this species was collected by Eduard Martin Reineck -- in whose honor it is named -- and Josef Czermak (no. 21) on a sunny hill near Moinhos do Vento, Porto Alegre, Rio Grande do Sul, Brazil, in November, 1897, and is deposited in the herbarium of Pomona College at Claremont, California. The species has been hitherto confused with "*Verbena chamaedryfolia* Juss.", which, however, is conspecific with *V. peruviana* (L.) Britton and is an entirely different plant with brilliant scarlet flowers and quite different foliar characters.